

**Midterm 2**  
**(20 points)**

Name: \_\_\_\_\_

1. Suppose that you work for the Iowa Attorney General. You have been asked to calculate the dead weight loss from a hog packing monopsony in a region of the state. An economics consulting firm estimates that price of hogs in the region is  $w(x) = 2 + \frac{1}{2}x$ , where  $x$  denotes the quantity of hogs supplied to the packing firm. The value marginal product of the hogs is  $VMP_x = 50 - \frac{1}{2}x$ .

1.a (2 points) What is the outlay and the marginal outlay for the hog packing firm?

1.b (3 points) Calculate (i) the packers profit maximizing quantity of hogs, (ii) the market price for hogs, and (iii) the socially efficient quantity of hogs in the market.

1.c (2 points) In words describe why there will be a dead weight loss under monopsony.

2. (3 points) Suppose that you are an owner of the only Jazz club in Ames. You know that ISU professors like jazz much more than ISU students. The demand for a night at your club is  $P = 9 - q$  from ISU professors and  $P = 6 - q$  from students, where  $q$  denotes the number of drinks that each will purchase inside your club. Assume that your customers include professors and students only. The cost of supplying and serving a drink is \$3.

Assume that you can easily distinguish between students and professors. How, and how much would you charge your customers in order to maximize your profits?

3. (2 points) Are consumers benefited or harmed by price discrimination? Explain your answer.

4. (2 points) Why do Governments impose regulations to control the amount of pollution that firms discharge into the environment?

5. (2 points) Do you think the US Government should ban packer ownership of livestock? Briefly explain your viewpoint on this issue.

6. In the past, the US government has used a *Target Price Program* for some grain crops. The way that the program works is as follows. The government promises to pay farmers a target price, which will be denoted  $P^T$ , for the commodity that is produced (for example, wheat). The quantity that farmers decide to produce is then sold to consumers at the price that consumers are willing to pay for the quantity. That is, the commodity is sold in the consumer market for whatever price the consumer market will bear. The government then uses tax revenues to pay farmers the difference between the target price and the price that clears the consumer market. Suppose that the aggregate supply for US wheat is given by  $S(P) = -20 + .5P$ . The demand for wheat is  $D(P) = 60.5 - 1.25P$ . Suppose that the target price is  $P^T = \$60$ .

6a. (2 points) Draw a diagram to show the dead weight loss in the market under the target price program.

6b. (2 points) Calculate the dead weight loss.